



Create Developed (Unrolled) Surfaces

## INTRODUCTION

EnSight provides several sophisticated tools for extracting computational surfaces from meshes. For clipped surfaces with a defined axis of rotation (such as those created with the quadric clipping tools), the surface can “developed” or unrolled onto a plane. All variables defined on the clip are properly interpolated onto the developed surface.

A clip can be developed based on curvilinear (radius, z), (theta, z), or (meridian, theta) coordinate projections. The “seam” of the clip can be specified interactively.

## BASIC OPERATION

To create a developed surface:

1. First, create the desired quadric clip (cylinder, sphere, or cone).

3. Click the Developed Surface icon.
4. Select the desired projection type (see below for details on the types).
2. Select the parent part for the developed surface (i.e. the part you created in step 1).
5. If applicable for the projection type (and desired) enter u,v scaling factors and press return).
6. To display and change the cutting seam, click the Show Cutting Seam button, and adjust the slider.
7. Click Create.

A part is developed by specifying one of three curvilinear mappings called *developed projections*. The projections are based on the curvilinear coordinates  $r$  (radius),  $z$ ,  $\theta$  (theta), and  $m$  (meridian or longitude). These coordinates are defined relative to the local origin and axis of the tool that created the parent part (e.g. the Cylinder tool). The projections are  $(r,z)$ ,  $(\theta, z)$ , and  $(m, \theta)$ . The  $u$ ,  $v$  scale factors (only for  $(\theta, z)$  or  $(m, \theta)$  projections) provide scaling for the coordinates in the listed order. For example, if the projection is  $(\theta, z)$  then  $u$  scales  $\theta$  and  $v$  scales  $z$ .

## SEE ALSO

[How To Create Quadric Clips](#)

User Manual: [Developed Surface Create/Update](#)